

Appl. No. 09/743,560  
Amdt. dated December 8, 2003  
Amendment under 37 CFR 1.116 Expedited Procedure  
Examining Group

**PATENT**

**Amendments to the Claims:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1 1-7 (Canceled)

1 8. (Currently amended): Sample observation method comprising steps of:  
2 acquiring, at a first scale factor, a reference sample image not including any  
3 defect on a sample with an imager, based on information on a defect on the sample detected by  
4 an inspection apparatus;

5 moving the sample in a viewing field of the imager and acquiring a defective  
6 sample image including the defect on the sample at a-the first scale factor with the imager, based  
7 on the information on the defect on the sample detected by the inspection apparatus;

8 locating the defect on the defective sample image by comparing the reference  
9 sample image and the defective sample image;

10 acquiring a magnified image of the located defect at a second scale factor greater  
11 than the first scale factor with the imager without moving the sample; and  
12 displaying the magnified image of the defect on a screen.

1 9. (Currently amended): Sample observation method comprising the steps  
2 of:

3 acquiring, at a first scale factor, a reference sample image not including any  
4 defect on a sample with an imager, based on information on a defect on the sample detected by  
5 an inspection apparatus;

6 adjusting a position of the sample so that the defect will fall within the field of  
7 view of said imager, based on the information;

8 acquiring a defective sample image including the defect on the sample at a-the  
9 first scale factor by said imager;

10 locating the defect on the defective sample image by comparing the reference  
11 sample image and the defective sample image;

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12 acquiring a magnified image of the located defect at a second scale factor greater  
13 than the first scale factor with said imager without changing the position of the sample; and  
14 displaying the magnified image of the defect on a screen.

1 10. (Previously presented): Sample observation method according to claim 9  
2 further comprising, subsequent to the step of acquiring a magnified image, a step of:  
3 erasing a background from the magnified image of the located defect.

1 11. (Previously presented): Sample observation method according to any one  
2 of claims 8, 9, and 10, wherein the reference sample image and the defective sample images are  
3 the images of the sample captured in secondary electrons emanated from the sample by  
4 irradiation of a charged particle beam.

1 12. (Currently amended): An apparatus for observing samples, comprising:  
2 image pickup means for acquiring an image of a sample;  
3 storage means to store information of an area to be observed on the sample;  
4 a position controller to control a position of the sample with respect to the image  
5 pickup means, based on the information stored in the storage means;  
6 display means to display images of the sample acquired by the image pickup  
7 means; and  
8 control means to locate a defect on the sample by comparing a plurality of images  
9 of the sample captured by the image pickup means at a first scale factor after the sample is  
10 positioned by the position controller and to control the image pickup means to acquire the a  
11 located defect image at a second scale factor greater than the first scale factor without changing  
12 the position of the sample.

13 wherein the plurality of images includes a reference sample image acquired by  
14 positioning the sample so that a reference area that is absent any defect is positioned within a  
15 viewing field of the image pickup means.

16 wherein the plurality of images includes a defect sample image acquired by  
17 positioning the sample to a defect position such that a defect area that includes at least one defect  
18 is positioned within the viewing field of the image pickup means.

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19                   wherein the located defect image is acquired by imaging an area of the sample  
20                   determined based on a comparison of the reference sample image with the defect sample image  
21                   without repositioning the sample from the defect position.

1                   13.     (Previously presented): An apparatus for observing samples, comprising:  
2                   storage means to store information on a defect on a sample detected by an  
3                   external defect inspection apparatus;  
4                   image pickup means for acquiring an image of the sample;  
5                   position control means to control a position of the sample, based on the  
6                   information stored in the storage means;  
7                   defect locating means to locate the defect by comparing an image of the sample  
8                   not including the defect and an image of the sample including the defect, wherein both of the  
9                   images are acquired at a first scale factor by the image pickup means after the sample is  
10                  positioned by the position control means; and  
11                  display means to display an image of the defect located by the defect locating  
12                  means and captured by the image pickup means at a second scale factor that is greater than the  
13                  first scale factor without changing the position of the sample.

1                   14.     (Previously presented): An apparatus for observing samples, comprising:  
2                   image pickup means for acquiring an image of the sample;  
3                   position control means to control a position of the sample so that a defect on the  
4                   sample will fall within the field of view of the image pickup means, based on information on the  
5                   defect on the sample detected by an external defect inspection apparatus;  
6                   defect locating means to locate the defect by comparing an image of the sample  
7                   not including the defect and an image of the sample including the defect, wherein both of the  
8                   images are acquired by the image pickup means at a first scale factor after the sample is  
9                   positioned by the position control means; and  
10                  display means to display an image of the defect located by the defect locating  
11                  means and captured by the image pickup means at a second scale factor that is greater than the  
12                  first scale factor without changing the position of the sample.

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1                   15.   (Previously presented): Sample observation equipment according to any  
2 one of claims 12 , 13 , and 14; wherein the image pickup means is a scanning electron  
3 microscope.

1                   16.   (Previously presented): Sample observation method according to claim 8,  
2 further comprising steps of:  
3                   moving the sample to acquire a magnified image of the reference sample with the  
4 imager;  
5                   acquiring a magnified image of the reference sample at the second scale factor  
6 with the imager; and  
7                   displaying the magnified image of the reference sample on the screen with the  
8 magnified image of the located defect.

1                   17.   (Previously presented): Sample observation method according to claim 9,  
2 further comprising steps of:  
3                   moving the sample to acquire a magnified image of the reference sample with the  
4 imager;  
5                   acquiring a magnified image of the reference sample at the second scale factor  
6 with the imager; and  
7                   displaying the magnified image of the reference sample on the screen with the  
8 magnified image of the located defect.